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ABSTRACT

A survey of 539 graduates of Iowa State University Agricultural Education Department from mid-1964 through 1981 was conducted. The graduates were grouped according to their experiences related to the teaching of vocational agriculture: those who decided not to teach, those who taught vocational agriculture and subsequently left the teaching profession, and those who persisted as vocational agriculture teachers. Questionnaires were administered to determine graduates' high school experiences, home background, employment experiences, reasons for not entering or for leaving the vocational agriculture teaching profession, reasons for staying in this field, the value of the student teaching experience as preparation for teaching, and skill areas that are relevant to educational training. Findings include the following: 61.4 percent had entered vocational agricultural teaching directly after graduation; a total of 69.8 percent had taught vocational agriculture at some point after graduation; in 1982 only 18.6 percent were teaching vocational agriculture; farming was the present occupation of about 25 percent of the graduates, followed by vocational agriculture teaching, agricultural sales, banking, and agribusiness management. Additional information covers such topics as salaries, hours spent on the job, and membership in professional organizations. The questionnaire is appended. (SW)

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A FOLLOW-UP AND ANALYSIS OF IOWA STATE UNIVERSITY AGRICULTURAL EDUCATION CURRICULUM GRADUATES: 1964-81

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INTRODUCTION

The choice of a college program of study is a decision made by all students at some point in time. Some students decide while in high school, and others may be attending a post-secondary institution or college exploring the various options and opportunities available to them before making the decision.

What factors influence students to enter an agricultural education curriculum? Are these factors different for agricultural education students when compared to students in other programs of study? When is the curriculum choice made by students? Reynolds (1977) asked these questions of agricultural education students at Illinois State University and the University of Illinois and found that the most influential factors for potential agricultural education majors were: the high school vocational agriculture instructor, vocational agriculture experience, knowledge of teaching opportunities, and college courses taken. He also found a majority of agricultural education majors tend to make their career choice after their sophomore year of college. This finding suggests that the college academic advisor and instructors of introductory agricultural education courses may be important factors in students' decisions.

Statement of the Problem

To accurately advise potential college students to help them choose agricultural education as their major, faculty and staff members find it necessary to seek out information related to planning and improving the curriculum. Faculty members can evaluate and update materials presented, however a more complete evaluation of a curriculum includes input from other sources; specifically, vocational agriculture teachers, state supervisors, students presently in the curriculum, and graduates of the program. Former students of a program can give insight on a curriculum that faculty and staff members may be unable to provide. A follow-up of curriculum graduates can be a

valuable tool to help improve or change programs at any educational level. Wentling and Lawson (1975) in their book on evaluation indicate that very important information on the strengths and weaknesses of a program can be garnered from former students, who they believe are in the best position to judge these characteristics. Also former students are capable of evaluating their preparation and are willing to suggest possible program improvements. They further stated:

> ... the follow-up can confirm the necessity for maintaining a particular course or program. Likewise, direct feedback regarding the worth or worthlessness of certain programs or courses can support their retention, revision or removal (Wentling and Lawson, 1975, p.126).

Oliver and Elson (1973, p.267) in a follow-up of former Virginia vocational agriculture students, felt student follow-up studies were important to keep programs "... in tune with changing conditions in the world of work." After completion of a follow-up of graduates of a two-year agricultural mechanics program in Illinois, Huber and Williams (1971) added:

> A follow-up study of graduates is one source of data that can be useful in evaluating a curriculum. It may not provide immediate answers regarding the effectiveness of a program, but it does yield information about the educational product that is essential for continuous evaluation (Huber and Williams, 1971, p. 194).

Some questions that possibly can be answered through a follow-up study of agricultural education graduates are:

1. Has the program kept pace with the technological changes that have occurred since the last follow-up?
2. Is the program meeting the demands of employers, both in education and in industry?
3. Can improvements be made in the curriculum requirements for graduates to get the courses that are needed?
4. Is the student teaching experience yielding realistic and positive viewpoints regarding the high school vocational agriculture teaching

position?

The Iowa State University Agricultural Education Department has as one of its missions to prepare persons to teach vocational agriculture in high schools. Administrators of the program realize there are numerous career alternatives for agricultural education graduates. In fact, an Iowa State University Agricultural Education brochure explains that there are more opportunities in the agricultural education program other than teaching high school vocational agriculture. The brochure states:

> Graduates of this program have ample opportunities for employment - whether they decide to teach or to pursue a related agricultural career. Currently about 60 percent of the Iowa State graduates in Agricultural Education become teachers of agriculture. Some graduates enter farming, extension, or government service. Others go into agribusiness, particularly in the areas of agricultural finance, sales and public relations (Agricultural Education, 1980, p. 1).

Numerous studies have been conducted on why vocational agriculture teachers leave the teaching profession, why some agricultural education graduates decide not to teach, and why others elect to make teaching a life-long professional career. All three groups were examined in this follow-up study. With the information received from the graduates the Agricultural Education Department can seek to make curriculum changes necessary to make the vocational agriculture teaching profession more attractive to high school and undergraduate college students.

The Agricultural Education Department has conducted earlier studies of its graduates, but the last follow-up study was completed in 1965, when Hoerner studied the January 1, 1940 to July 1, 1964 graduates. This study began with the July 1, 1964 graduates and continued through December 31, 1981. The decision was made to end with December 1981 graduates because they had been in the work force over one year and should be able to provide more valuable and pertinent information than more recent graduates.

Purpose of the Study

The purpose of this study (Chizek, 1983) was to follow-up the alumni of the Iowa State University Agricultural Education curriculum who graduated during the period of July 1, 1964 through December 31, 1981.

The objectives of the study were:

1. To identify the present employment status of Iowa State University agricultural education graduates from 1964-81.
2. To identify the most influential factors for vocational agriculture teachers to enter and then leave the teaching profession.
3. To identify the most influential factors for agricultural education graduates to decide not to teach.
4. To identify the most influential factors for teachers of vocational agriculture to enter and remain in teaching.
5. To identify the graduates' perceptions of the adequacy of training and amount of coursework required in the Iowa State University Agricultural Education curriculum.
6. To identify the graduates' perceptions of the student teaching program and related experiences in agricultural education.

Hypotheses to be Tested

All graduates in the study were grouped by their experience in teaching vocational agriculture: those agricultural education graduates who decided not to teach, those who taught vocational agriculture and subsequently left the teaching profession and, those who entered teaching and were continuing to teach vocational agriculture. The following null hypotheses were tested:

No significant difference exists among the three groups in :

1. Agricultural background before entering college.
2. High school vocational agriculture and FFA background.
3. Characteristics of present occupation as measured by:

a. Number of months to earn salary,

b. Average number of nights per week spent on job-related duties, and

c. Hours per week spent on job duties.

4. Distance of present employment from parents' or spouses' parents home.

5. Perceptions of the student teaching program and related experiences.

6. Perceptions of academic advising received at Iowa State University.

7. Perceptions of the effectiveness of the total agricultural education undergraduate program as preparation for first and present employment.

8. Perceptions of the adequacy of training received in the agricultural education curriculum.

RELATED LITERATURE

The Agricultural Education Department at Iowa State University has conducted a number of research studies using responses from graduates. The earliest study was by Knox (1939) who looked at the occupational experiences of 325 men who qualified to teach vocational agriculture at Iowa State College between 1923 and 1938. The reason this study started with graduates in 1923 was because the Smith-Hughes Act of 1917 did not become effective until 1918 meaning there were no four-year graduates in agricultural education who qualified under the Smith-Hughes Act until 1922. Knox found 80.7 percent of the 325 graduates had previously taught vocational agriculture or were still teaching this subject in 1938. Ninety-five percent of the persons in the study were teaching vocational agriculture or were employed in other occupations for which they apparently had been prepared for by their college training and experience as teachers. Only

five percent were employed in occupations classified as other than education or agriculture. In addition, he indicated that only 16 percent had never taught vocational agriculture. He also found that the occupational distribution grew wider as the length of time since qualifying to teach increased. Of those qualifying from 1923 to 1927, 20.7 percent were engaged in teaching; of the 1927 to 1931 graduates, 38.6 percent were teaching; of the qualifiers from 1931 to 1935, 58.7 percent were teaching vocational agriculture; and of the 1935 to 1938 group, 86.8 percent were in the occupation of teaching vocational agriculture in 1938. Over forty-three percent of all graduates from 1923 to 1938 were still teaching in 1938.

Reinebach (1951) attempted to develop a formula for predicting permanency in teaching for college students qualifying to teach vocational agriculture by using information about student's farm experience, college extracurricular activities, scholastic aptitude and academic achievement. He included 185 graduates at Iowa State College who qualified to teach vocational agriculture from 1938 through 1947. It was indicated that the study was conducted because some students qualifying in this field found themselves without either the personal traits or the interest needed for permanency in teaching vocational agriculture. The two criteria used in the investigation were: (1) years spent in agricultural education related work, and more specifically (2) years spent teaching vocational agriculture, including teaching veterans in the on-farm training program. None of the variables tested yielded significant biserial correlations with either of the criteria. The attempt to predict permanency in teaching for college students qualifying to teach vocational agriculture was unsuccessful.

Bell (1950) conducted a study of agricultural education graduates for the years 1938 to 1949 from Iowa State College. The purpose of his study was to identify different characteristics among graduates who had entered and remained in teaching vocational agriculture, and those who had not

entered or had entered but had not remained in teaching. He found 92.4 percent of the respondents were in occupations related to agriculture or education. He further found that individuals who had more nonfarm work experience prior to graduation were more likely to stay in teaching. No significant differences were found when the student's decision to enter teaching was compared with years of 4-H experience, high school vocational agriculture, or father's occupation.

Bell (1950) also identified reasons that may have influenced vocational agriculture instructors to change from one vocational agriculture teaching position to another. Reasons given in his study included:

> (1) higher salary in another school; (2) new location provided better opportunities for developing other interests; (3) department budget and equipment inadequate; (4) desired a different type of farming area; (5) expected to carry too many classes and other school activities; (6) could not devote full-time to agriculture; (7) family influence, wife, or other; and (8) living in an undesirable community - too small (Bell, 1950, p.53).

Rhea (1953) studied present status and opinions of all graduates in agricultural curricula at Iowa State College from 1932 to 1952. Included in his population were 551 agricultural education graduates. He found that 300 of the 459 agricultural educuation respondents became teachers of vocational agriculture immediately after graduation. In 1952, however, only 167 (30.3 percent) of all graduates were still teaching vocational agriculture.

In 1965, Hoerner (1965) studied the employment factors related to agricultural education of 1162 students graduating from Iowa State University from January 1, 1940 to July 1, 1964. He observed that 570 graduates (55.8 percent) entered teaching directly after graduation from college. A total of 654 (64.0 percent) of the graduates had taught vocational agriculture. Only 186 (18.2 percent) of the 1940-64 graduates were still teaching in 1964. Thirty-six percent of the graduates never

taught vocational agriculture. Factors having the greatest influence on the graduate's decision to enter their first employment area were: felt best trained, working closely with people, freedom and independence of the job, and salary. Also identified were the most influential factors on the graduate's decision to enter their 1964 employment area, these factors were: felt best trained, freedom and independence of the job, salary, working closely with people, opportunity for advancement, and security.

Froehlich (1966), in a follow-up study of Hoerner's research, looked at factors related to why Agricultural Education Program graduates from Iowa State University decided not to teach or decided to enter and then leave the vocational agriculture teaching profession. His study included 823 graduates during the 1940-1964 period who had decided not to enter teaching or had entered and left vocational agriculture teaching. Froehlich's study revealed information that there was a slowly increasing percentage of graduates who never entered the vocational agriculture teaching profession. Only five percent of the 1940 graduates did not enter the teaching profession, whereas, 47 percent of the 1964 graduates did not enter the teaching field.

A study conducted by Phelps (1969), involving all 240 Iowa vocational agriculture instructors, identified reasons why vocational agriculture teachers remain in the teaching field. Two of the major objectives of the study were to determine the background and professional attitudes of the vocational agriculture teachers. With this information available, it was hoped that high school and college counselors would be more effective in selection of future vocational agriculture teachers and local and state administrators might be better able to plan, supervise, and administer the vocational agriculture programs in the state of Iowa. He listed the following procedures to improve the number of prospective teachers who enter the profession and the tenure of employed teachers:

(1) provide communication materials needed to create additional interest in vocational agriculture teaching; (2) provide more off-campus graduate courses; (3) provide secretarial assistance to the vocational agriculture instructor; (4) provide increased supervision and counseling services especially for the instructors with short tenure; (5) provide instructional materials and resources for the teachers; and (6) provide instructors with technical specialists for assistance in conducting both the day and post high school programs (Phelps, 1969, p.62).

A review of literature revealed that no comprehensive follow-up of Iowa State University agricultural education graduates had been conducted since 1964. To bring the follow-up of graduates up-to-date, the decision was made to gather information beginning with the Summer, 1964 graduates.

METHODOLOGY

The primary purpose of this study was to follow-up graduates of the Agricultural Education program Iowa State University from July 1, 1964 through December 31, 1981. To accomplish this purpose the following methods and procedures were employed.

Design

The design for this research project was a descriptive survey. Borg (1981, p. 129) simply described descriptive research as "... aimed at describing the characteristics of subjects of the science." He further stated that research in education and the related behavioral sciences is much newer than the natural sciences. This being the case, much of the early work in a new science is descriptive because it is necessary to know the characteristics of the subjects before trying to study more complex research questions. He concluded " ... descriptive research is important to education" (Borg, 1981, p. 129).

Population and Sample

The population and sample for this study included the 680 Bachelor of Science degree graduates from the Iowa State University Agricultural Education program from July 1, 1964 through December 31, 1981.

The sample for the study included the entire population (census) of Bachelor of Science degree graduates in Agricultural Education from Iowa State University from July 1, 1964 through December 31, 1981. All graduates were sent a questionnaire including those with foreign addresses. It was felt that if this study was to represent the entire population of graduates, the whole population should have an opportunity to respond to the questionnaire, however, no responses were received from any of the seven graduates with foreign addresses. It was found three graduates in the population were deceased, thus, the total number of graduates sent questionnaires was actually 677.

For the purpose of this study the graduates were grouped according to their experience related to the teaching of vocational agriculture: those graduates who decided not to teach, the graduates who taught vocational agriculture and subsequently left the teaching profession, and graduates who entered teaching and were continuing to teach vocational agriculture.

Instrumentation

The questionnaire was developed by the researcher; questions were selected and modified after reviewing studies conducted by Hoerner (1965), Knight and Bender (1978), and Peterson and Rabideau (1981). To ensure the validity of the instrument, professors from the Agricultural Education, Agricultural Engineering, and Research and Evaluation departments plus graduate students in agricultural education reviewed and provided useful comments to clarify the components of the questionnaire. Changes in the questionnaire were made based upon the suggestions received.

The final questionnaire consisted of seven sections of information.

Section one was designed to gather information on high school experiences, home background, and first and present employment information. Section two was developed to identify the most influential factors as to why graduates left the vocational agriculture teaching profession, why other graduates decided not to enter the teaching profession after completing the agricultural education program, and why others entered and remained in teaching. Questions in section three requested information from graduates on college experiences and background while at Iowa State University. Section four was designed to collect information on how beneficial the student teaching experience was in preparing the graduates for their present occupation. In section five graduates were asked to rate the effectiveness of the academic advising they received in the agricultural education undergraduate program at Iowa State University. Section six asked graduates two questions concerning thirteen skill areas which were considered relevant to their educational training. The first question in section six asked graduates to indicate their perception of the adequacy of training received in the thirteen skill areas using a rating scale where: 1 = poor, 2 = fair, 3 = average, 4 = good, or 5 = excellent. The second question asked the graduates to indicate if they felt the number of credit hours required in a given skill area should be decreased, maintained, or increased. The purposes of the questions in section seven were to identify how the graduates made contact with their first employer and to identify the highest level of education achieved by the graduates.

Data Collection

Names and addresses of the graduates were obtained from the Iowa State University Alumni Office. A cover letter was developed to explain the purpose and importance of the study. The questionnaire and cover letter were mailed with a stamped self-addressed outside cover sheet. Three weeks

after the initial mailing, 52.44 percent of the questionnaires had been returned. At that time a postcard reminder was mailed to the nonrespondents (see Appendix). By February 15, 1983, 60.71 percent of the instruments had been returned. Two follow-up mailings were made to the nonrespondents. Three months after the initial mailing the return was 539 or 79.62 percent of the graduates participating. An informal assessment of the non-respondents by telephone indicated the non-respondents were not different from the respondents.

Analysis of Data

The data collected from the graduates were coded, key punched and analyzed at the Iowa State University Computation Center. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) (Nie et al., 1975). The following sub-programs were used: FREQUENCIES, CROSSTABS, BREAKDOWN, ONEWAY, and PEARSON CORR.

The SPSS subprogram FREQUENCIES was used to obtain means and standard deviations for selected graduate characterisitics and perceptions. SPSS subprogram CROSSTABS was employed to compute the frequency distribution among the three vocational agriculture teaching experience groups. CROSSTABS was also used to develop frequency distribution tables for selected factors among the fourteen employment areas in which graduates are employed.

The graduates' perceptions of the adequacy of training received at Iowa State University and most influential factors in choosing their occupation were compiled using the SPSS subprogram BREAKDOWN. The SPSS subprogram ONEWAY was used to analyze the mean responses of the three vocational agriculture teaching experience groups in their perceptions of the adequacy of their training, benefit of the student teaching experience and their agricultural background before entering college. The subprogram PEARSON

CORR was used to analyze the relationships between selected characteristics and the perceptions of graduates regarding the adequacy of training they received.

SUMMARY OF RESULTS AND CONCLUSIONS

The most influential persons on the graduates' decision to attend college were: the graduate's father or guardian, graduates' own idea, mother or guardian, and vocational agriculture instructor. The persons making the greatest contribution to the graduates' decision to enroll in agricultural education were the vocational agriculture instructor and the graduates themselves. Parents were very influential in the graduates' decision to attend college but had little influence on the graduates' decision to attend Iowa State University or to enroll in agricultural education. The fact that the vocational agriculture instructor had the greatest influence on the graduates' decision to enter agriculture education may be expected because: (1) students in vocational agriculture and FFA activities work closely with the instructor, and (2) similar results were reported by Hoerner (1965).

The need for a college degree in the graduates' desired occupation was the most influential factor on their decision to attend college. Additional factors were: expectations of others, closeness to college, and personal desire and expectations for further education. These influential factors were related to the graduates' primary reasons for enrollment at Iowa State University which were: Iowa State University was the only agricultural university in Iowa, and Iowa State University offered agricultural education. It may be possible that while deciding on which college to attend, graduates were also planning to enter an agricultural education program which led them to enroll at Iowa State University.

Over 63 percent of the graduates had taken additional coursework since

receiving their Bachelor of Science degree including 4.1 percent who had received their Ph.D. degree. Possible reasons for the high percentage of graduates continuing their education are: (1) agriculture and education are areas which are constantly changing; therefore, graduates who were teaching vocational agriculture may want to stay abreast of technical changes, (2) teachers need to take extra coursework to maintain their teaching certificate, and (3) the availability of courses has increased with Iowa State University and other post-secondary institutions offering off-campus courses.

A large number, 331 graduates (61.4%), had entered vocational agriculture teaching directly after graduation. A total of 376 graduates (69.8%) had taught vocational agriculture at some point after graduation from Iowa State University. Those who entered the teaching profession taught an average of 4.1 years, while those continuing to teach vocational agriculture had a mean tenure of 5.8 years. As would be expected, the earlier graduates had more tenure in teaching. In 1982, only 100 graduates (18.6%) were teaching vocational agriculture, the profession for which they prepared.

These figures and percentages on tenure of graduates in vocational agriculture teaching are similar to the findings reported by Hoerner (1965). He found that 64 percent of the graduates had taught vocational agriculture with a mean tenure of 5.4 years. He also found only 18.2 percent of the graduates were teaching vocational agriculture with a mean tenure of 7.0 years at the time of his investigation.

Farming was listed as the 'present occupational area' employing the highest percentage (25.6%) of the graduates. The next four 'present occupational areas', in descending order, were: vocational agriculture teaching, agricultural sales, banking, and agribusiness management. A large decrease in numbers of vocational agriculture teachers was revealed. A

total of 331 persons initially entered vocational agriculture teaching, and only 100 persons remained in this area at the time of study. These figures do not refute the belief that the agricultural education program prepares persons not only for teaching vocational agriculture but also for many other related occupations.

Approximately 38 percent of the graduates had held two full-time positions since graduation, while 28.9 percent had held just one full-time job, 19.5 percent had held three positions, 6.9 percent had held four full-time jobs since graduation, and three percent had held more than four positions. This number of job changes was not unexpected because many had initially taught vocational agriculture and left teaching to enter another full-time position.

Distance to the parental homes from the graduates' present employment location revealed that almost one third of the graduates lived within ten miles of their parents and over 16 percent lived within ten miles of their spouses' parents. Over 70 percent of those graduates farming lived within ten miles of their parental home, while only about 18 percent of the graduates teaching vocational agriculture lived within 10 miles of their parents. It appears that graduates may migrate to the parental home if the opportunity is available. This phenomenon may be related to the opportunity to return to the farm.

Graduates in all employment areas had a mean number of months worked to earn their salary greater than 11 months, except for the other education occupations with a mean of 9.25 months. Seventy-nine percent of the vocational agriculture instructors had a full 12-month contract, while 14 percent held an 11-month contract.

Farmers and insurance agents spent the greatest number of nights on job related duties, over 2.75 nights per week, while vocational agriculture instructors spent over 2.5 nights per week. That these occupations would

require the most nights nights per week was not unexpected. Farmers have work in both crop and livestock enterprises that needs to be done, and insurance agents need to contact persons at home, after the client's work day. Vocational agriculture instructors have various school and professional activities to attend as part of their occupation. Peterson and Rabideau (1981) found similar results for vocational agriculture teachers in Minnesota.

The mean number of hours spent on the job revealed that, as a group across all fourteen employment areas, the average was 51.2 hours per week. Farmers averaged 60 hours and vocational agriculture instructors avearaged almost 51 hours per week. It was expected that these two occupations would rate near the top of the list mainly because of the nature of their work. Graduates in these professions can not drop their tools at 5:00 p.m. and return home to wait for the next day's work. The hours worked per week were found to be similar to what Peterson and Rabideau (1981) found in Minnesota and what Dillon (1979) observed with Nebraska vocational agriculture instructors.

The amount of gross income by salary ranges for the fourteen employment areas of graduates was obtained in the study. Seventy-nine percent of the graduates employed as vocational agriculture instructors had net income levels in the range of $16,000 to $25,000 per year. Reported salary ranges for all employment areas except, graduate students, insurance agents, non-agricultural management, and other education occupations, were higher than the ranges for vocational agriculture instructors. This finding was not unexpected because even though salary was not listed as a major factor in the graduates' decision to enter and/or leave vocational agriculture teaching, it is one factor which must be considered. Teachers of vocational agriculture are not staying in the teaching profession for the salary, as salary was ranked as number 21 in the list of reasons they are continuing to

teach vocational agriculture by those graduates who entered and remained in teaching. However, vocational agriculture instructors are sometimes lured to other occupational opportunities where the salary is higher.

The factor most influential in the graduates' decision to either not enter teaching or to enter and then leave vocational agriculture teaching was, 'another opportunity made available out of teaching'. These other opportunities appeared to be in the employment areas of farming, sales, banking and management.

Additional influential factors on the graduates' decision to not enter teaching vocational agriculture were: inadequate advancement opportunities, inadequate salary, never planned on teaching and dislike of student attitudes. Influential factors on the graduates' decision to enter and then leave teaching were: long range goal was different than teaching vocational agriculture, inadequate advancement opportunities, dislike of student attitudes, and inadequate school administrative support on decisions. The factors, 'never planned on teaching', 'and long range goal was different than teaching vocational agriculture', suggests graduates are using the agricultural education program and vocational agriculture teaching experience as stepping stones to other employment areas.

The most influential factors in the graduates' decision to enter and remain in teaching vocational agriculture were: felt teaching effectiveness increased after first year, enjoyed working with high school students, enjoyed work in the FFA, ablility to teach areas that are enjoyable, and felt competent to teach students. The factors having the least degree of influence were: adequate salary, social status associated with teaching, compatibility of spouses' career with teaching, home ownership, and spouses' happiness with teaching.

Comparisons were made of the three vocational agriculture teaching experience groups using one-way analysis of variance (ANOVA) to test for

differences in mean responses. Null hypothesis 1 stated: no significant difference exists among the three groups in agricultural background before entering college. A total of 504 (93.5%) of the graduates were reared on a farm, while 17 (3.2%) were reared in a family agribusiness. A total of 324 (60.1%) of the graduates had experience in the 4-H youth organization. The analysis of variance revealed the groups were not significantly different at the .05 level. Therefore, the results failed to reject null hypothesis 1. These results would be expected because graduates had very similar agricultural backgrounds before entering college and the agricultural education program.

A comparison was made concerning the three groups' high school vocational agriculture and FFA background. Null hypothesis 2 stated: no significant difference exists among the three groups in high school vocational agriculture and FFA background. It was revealed that 414 (76.8%) of the graduates had taken an average of 7.33 semesters of vocational agriculture while in high school. Of the 414 graduates 401 (96.9%) had been members of the Future Farmers of America (FFA) organization for an average of 4.17 years. The ANOVA test revealed there was no significant difference among the groups in semesters of vocational agriculture taken in high school, but there was a significant difference at the .05 level for the number of years of FFA membership. Those graduates continuing to teach vocational agriculture had a higher mean number of years of FFA membership than did the graduates who decided to not enter teaching or had taught and subsequently left teaching vocational agriculture. This difference in FFA membership corresponded to one of the most influential factors in the graduates' decison to enter and remain in vocational agriculture teaching; which was, 'enjoy work in the FFA'. On this basis null hypothesis 2 was rejected as there was a difference in the groups in reference to vocational agriculture and FFA background.

Null hypothesis 3 stated: no significant difference exists among the three groups in characteristics of present occupations as described by:

a. Months employed to earn salary,

b. Average nights per week spent on job related duties, and

c. Hours per week spent on job.

The F values from the analysis of variance were not significant for Ho3a and Ho3c; therefore, the null hypotheses were not rejected. The number of months employed to earn their salary and hours spent on the job per week were not significantly different among the three groups. However, a significant difference was found between those graduates continuing to teach vocational agriculture and those graduates who had entered vocational agriculture teaching and subsequently left. Those continuing to teach spent a significantly higher number of nights per week on job related duties. This difference may be due to the number of after school and evening meetings a vocational agriculture instructor needs to attend for job-related activities and professional development. Those graduates who had taught and subsequently left teaching ranked the two factors of long hours and too many meetings to attend, as important reasons why they left teaching. The null hypothesis as stated: no significant difference exists among the three groups in characterisitics of present occupations as measured by average nights per week spent on job related duties, was rejected.

The number of professional organization memberships, number of full-time occupations and length of first employment were all found to be significantly different among the three groups. The graduates who were continuing to teach joined a greater number of professional organizations than did the other graduates. There are a variety of professional organizations available to teachers of vocational agriculture. Even though membership in professional organizations is voluntary, some teachers feel they are expected to join many of these organizations. The number of

full-time occupations and length of first employment were also significantly different between those graduates continuing to teach vocational agriculture and those graduates who decided not to enter teaching or who had entered and subsequently left teaching vocational agriculture. This finding may be expected because those continuing to teach have had just one position and the tenure would be for their first employment area, compared to those who had taught and left teaching vocational agriculture for another occupation. Those graduates who had not entered vocational agriculture teaching may have had more full-time occupations and shorter tenure in their first position because of promotions and/or required relocations to advance in the occupational area.

A comparison of distance from parents or spouses' parents by graduates vocational agriculture teaching experience was conducted. Null hypothesis 4 stated: no significant difference exists among the three groups regarding distance of present employment from parents' home or home of spouses' parents. A significant difference was found in the mean distance from the graduates' parental home between those graduates continuing to teach and the other two groups. Vocational agriculture teachers lived closer to their parental home. This may be explained by the opportunity for vocational agriculture instructors to choose an area of the state to live and work in which they are familiar with and feel they would enjoy. A sizeable number, 18 percent, of the graduates teaching vocational agriculture lived within 10 miles of their parental home. Graduates in the other two groups may be employed with firms that place their employees in areas where they are needed, without regard to employees' personal preference for location. The ANOVA test conducted on the mean distance in miles from spouses' parental home showed similar results, except that those graduates who decided not to teach vocational agriculture had a significantly higher mean distance from their spouses' parental home than did those graduates continuing to teach.

On this basis, null hypothesis 4 was rejected.

Null hypothesis 5 stated: no significant difference exists among the three groups regarding their perceptions of the student teaching program and related experiences. The only experiences or factors not significant when tested were, to be a community leader, the ability to speak in front of a group, and to set goals and strive towards them. An interesting note was those graduates continuing to teach vocational agriculture had a significantly lower mean for the experiences: for work with adults and for work with young adults. This was unexpected but possibly a positive result because those gradates in the other two groups felt stronger about parts of the student teaching experience than did graduates who were teaching, meaning they did possibly benefit by student teaching even though they were not teaching at the time of study. Null hypothesis 5 was rejected as there was a difference in the means of the three groups based on their perceptions of the value of student teaching and related experiences.

The graduates' perceptions of the academic advising they received was examined. Null hypothesis 6 stated: no significant difference exists among the three groups in perceptions of the academic advising received at Iowa State University. Over 56 percent of the graduates felt the academic advising was quite helpful or of great value. Only 4.3 percent of the graduates felt the academic advising was not helpful at all. This finding suggests the academic advisors were meeting the felt needs of most graduates whether they were planning on teaching vocational agriculture or entering a related agricultural occupation. On this basis, the null hypothesis was not rejected.

A comparison was made of the three groups for their mean ratings of the effectiveness of the total agricultural education undergraduate program. Null hypothesis 7 stated: no significant difference exists among the three groups in perceptions of the effectiveness of the total undergraduate

program as preparation for first and present employment. Approximately 70 percent of the graduates rated the effectiveness of the total program as preparation for first employment as good or excellent. The analysis of variance test revealed a significant difference between those graduates who had entered and then left teaching vocational agriculture and those graduates continuing to teach vocational agriculture. Graduates who had once taught had a mean rating of the effectiveness of the program which was significantly higher than those who continued to teach. A possible explanation may be that the graduates who had once taught felt they were well prepared to enter teaching, while those graduates who were continuing to teach felt more could have been done to prepare them. Also, those who were continuing to teach had no other occupation to compare their training to, and may have felt they needed more preparation to teach vocational agriculture. When the same test was conducted to compare the effectiveness of the total program in preparation for present employment, no significance was found among the three groups. This indicates those graduates who had not taught or who were former teachers, felt the program was as effective in preparing them for their present position as those who were teaching at the time of study. This suggests the agricultural education program is doing a good job of giving its graduates a well-rounded education for related occupations outside of teaching vocational agriculture but the graduates continuing to teach did not rate the program as highly. Null hypothesis 7 was rejected as differences were found to exist among the groups in graduates' perceptions of the effectiveness of the undergraduate program as preparation for first and present employment.

A comparison of the graduates' perceptions of the adequacy of training received at Iowa State University was conducted. Null hypothesis 8 stated: no significant difference exists among the three groups in perceptions of the adequacy of training received in the agricultural education curriculum.

Significant mean ratings were found for agricultural economics between non-teachers and former teachers with the means of non-teachers being significantly higher. The non-teacher group may work with economics more in their occupations and/or feel that economics were more beneficial to them than former teachers. The other 12 skill areas were not found to be significantly different as perceived by the three groups of graduates. Since only one skill area of the 13 yielded a significant difference, null hypothesis 8 was not rejected.

The graduates were asked their perceptions of the amount of coursework required in the agricultural education program. Those graduates who decided not to teach felt an increase in the amount of coursework should be required in the areas of adult work, agricultural economics, and communication. Former teachers indicated an increase in coursework should be required in agricultural economics, adult work, program development, methods, and communication. Graduates who were continuing to teach vocational agriculture felt the amount of coursework should be increased in the following skill areas: agricultural economics, horticulture, adult work, program development, and methods. Because so many of the agriculture professions are surrounded by economics it is not surprising to see a need for an increase in agricultural economics for all groups. All three groups also recommended an increase in adult work, possibly because most graduates, whether teaching or agribusiness, work with adults in some aspect of their present position and wish to have more knowledge related to working with adults. Graduates who were teaching vocational agriculture indicated a desire to have more new teaching ideas and techniques to make their work more effective. On this basis, it is not surprising that graduates indicated a desire for an increase in program development and methods. The graduates also recommended an increase in coursework in the area of horticulture. This may indicate that teachers are beginning to modify their

programs to accommodate high school students who may desire more non-traditional, non-production agricultural offerings.

As a total group, graduates felt the amount of coursework in the thirteen skill areas should be maintained except in the areas of agricultural economics and adult work, where increases were indicated as being needed by all three groups of grauates.

RECOMMENDATIONS

Based upon the findings of this study, the following recommendations are made:

1. The amount of coursework required, especially in the areas of agricultural economics and adult work should be examined to possibly better meet the needs of agricultural education graduates.
2. The agricultural education program at Iowa State University should consider shifting from a predominately production agriculture format to a more diversified format that also addresses non-production areas of agriculture.
3. The student teaching program and its related experiences should be evaluated to ensure that graduates receive a realistic and fulfilling experience as a vocational agriculture instructor.
4. Follow-up studies of the Iowa State University Agricultural Education program should be conducted more often and at equal intervals (such as five years) so that comparisons may be made more consistently among graduates.
5. A follow-up of this study using the year of graduation and the unused collected data in the analysis should be completed.
6. The concern for the number of graduates entering the teaching profession and the retention of graduates in teaching may be over-emphasized; some students are entering the agricultural

education program with no intention of ever teaching vocational agriculture while others are using the program and teaching experience as stepping stones to meet other career goals. As explained in the Introduction, the Agricultural Education brochure (1980) suggests that the agricultural education curriculum prepares graduates not only for vocational agriculture teaching, but also other agriculturally related careers. The results of this study support that statement.

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Name _____

Address _____

Present Occupation _____

If you are not self-employed, what is your employer's name and address:

_____

_____

_____

What agricultural experiences did you have while in high school? Please check all that apply and complete blanks requesting definite data.

_____ raised on a farm
_____ raised in an family agribusiness
_____ work experience on a farm _____ years
_____ work experience in an agribusiness _____ years
_____ FFA member: _____ years
  _____ Greenhand
  _____ Chapter Farmer
  _____ State Farmer
  _____ American Farmer
_____ 4-H member: _____ years
_____ Vo-Ag: _____ semesters
_____ Other: (specify) _____

1. Were you ever employed as a Vocational Agriculture Instructor?

_____ Yes
_____ No
If yes, how long were you employed? _____ years _____ months

2. How many different full-time occupations have you had since graduating from Iowa State University?

_____

3. What was the title of your first full-time job following college graduation? (i.e., Vo-Ag Instructor, Salesman, Farmer, Loan Officer, etc.)

_____

4. What was the length of time in years of your first employment or occupational area? (Exclude change of school or change within same occupational area.)

_____ years (round to nearest 1 year)

5. What is your present gross income? If you are self-employed, what was your net income for 1981?

_____ under $10,000
_____ $10,001 - $13,000
_____ $13,001 - $16,000
_____ $16,001 - $19,000
_____ $19,001 - $22,000
_____ $22,001 - $25,000
_____ $25,001 - $28,000
_____ $28,001 - $31,000
_____ $31,001 - $34,000
_____ $34,001 - $37,000
_____ $37,001 - $40,000
_____ over $40,000

6. How many months per year are you employed to earn the above salary?

_____

7. I work an average of _____ nights per week (other than normal day hours) on duties directly related to my job either at home, office or attending meetings.

8. I spend an average of _____ hours per week on the job.

9. I life within _____ miles of my parents.
_____ miles of my spouse's parents (if applicable).

10. Which three persons most influenced your decision to attend college? Rank as 1, 2, 3, in order of influence with 1 most influential.

a. _____ Father or guardian
b. _____ Mother or guardian
c. _____ Vo-Ag Instructor
d. _____ H.S. Supt. or principal
e. _____ High school counselor
f. _____ County Extension Director
g. _____ A friend in college
h. _____ Relatives other than parents
i. _____ Own idea
j. _____ Spouse/fiancee
k. _____ Other (please specify)
_____

11. Which three factors most influenced your decision to attend college? Rank as 1, 2, 3, in order of influence with 1 most influential.

a. _____ G.I. Bill
b. _____ High School Career Day
c. _____ Need of college degree in desired occupation
d. _____ Offered a college scholarship
e. _____ Closeness to college
f. _____ Expectations of others
g. _____ Other (please specify) _____

12. You will complete only <u>one</u> section of this question. If you taught vo-ag and left a full-time teaching position, answer question 12a. If you never taught, answer question 12b. If you are presently teaching vo-ag, answer question 12c.

12a. If you have taught vo-ag and left a full-time teaching position, indicate how each of the following factors affected your decision to leave. Circle the most appropriate level of influence for each factor.

EXAMPLE: a. Dislike teaching 1 2 (3) 4 5
(In this example, the factor dislike teaching had some influence upon the decision to leave teaching.)

		Level of Influence				
		None	Little	Some	Much	Very Much
a.	Long range occupational goal was something different than teaching vocational agriculture.	1	2	3	4	5
b.	Made inadequate salary	1	2	3	4	5
c.	Spouse was not happy with teaching profession.	1	2	3	4	5
d.	Disliked student attitudes	1	2	3	4	5
e.	Inadequate administrative support, backing on decisions .	1	2	3	4	5
f.	Too much paperwork.	1	2	3	4	5
g.	Inadequate preparation on how to teach	1	2	3	4	5
h.	Little or no opportunity to specialize	1	2	3	4	5
i.	Long hours	1	2	3	4	5
j.	Students lacked interest.	1	2	3	4	5

		None	Little	Some	Much	Very Much
k.	Had students in class that should not have been there	1	2	3	4	5
l.	Inadequate advancement opportunities.	1	2	3	4	5
m.	Too many required extra-curricular activities.	1	2	3	4	5
n.	Inadequate facilities, instructional aids, and materials available.	1	2	3	4	5
o.	Received inadequate assistance from teacher education	1	2	3	4	5
p.	Inadequate technical preparation for the profession.	1	2	3	4	5
q.	Inadequate preparation for organizing and conducting a vocational agriculture program.	1	2	3	4	5
r.	Disliked working with high school students.	1	2	3	4	5
s.	Disliked area of state	1	2	3	4	5
t.	Disliked disciplining students.	1	2	3	4	5
u.	Too many meetings to attend as a vo-ag instructor	1	2	3	4	5
v.	Unfavorable community attitudes toward vocational agriculture	1	2	3	4	5
w.	Too much time required for FFA activities	1	2	3	4	5
x.	Other opportunity was made available out of teaching	1	2	3	4	5
y.	Trend toward less emphasis on vocational agriculture	1	2	3	4	5
z.	Other (please specify) _____	1	2	3	4	5

GO TO QUESTION #13.

12b. IF YOU NEVER TAUGHT AFTER COMPLETING THE AGRICULTURAL EDUCATION PROGRAM, indicate how each of the following factors affected your decision not to teach. Circle the most appropriate level of influence for each factor.

EXAMPLE: a. Dislike teaching 1 2 (3) 4 5
(In this example, the factor dislike teaching had some influence upon the decision to never teach.)

		Level of Influence				
		None	Little	Some	Much	Very Much
a.	Bad student teaching experience	1	2	3	4	5
b.	Never planned on teaching	1	2	3	4	5
c.	Inadequate salary	1	2	3	4	5
d.	Disliked student attitudes	1	2	3	4	5
e.	Too much paperwork.	1	2	3	4	5
f.	Disliked teaching certain subjects in vo-ag	1	2	3	4	5
g.	Felt inadequate to teach certain subjects	1	2	3	4	5
h.	Inadequate preparation on how to teach	1	2	3	4	5
i.	Little or no opportunity to specialize	1	2	3	4	5
j.	Students lacked interest.	1	2	3	4	5
k.	Inadequate advancement opportunities.	1	2	3	4	5
l.	Inadequate technical preparation for the profession.	1	2	3	4	5
m.	Insufficient preparation for organizing and conducting a vocational agriculture program.	1	2	3	4	5
n.	Inadequate preparation for advising an FFA chapter	1	2	3	4	5
o.	Disliked working with high school students.	1	2	3	4	5
p.	Disliked disciplining students.	1	2	3	4	5
q.	Other opportunity was made available out of teaching	1	2	3	4	5
r.	Long hours	1	2	3	4	5
s.	Inadequate preparation for teaching adults.	1	2	3	4	5

		None	Little	Some	Much	Very Much
t.	Trend toward less emphasis on vo-ag	1	2	3	4	5
u.	Disliked rigid school schedule.	1	2	3	4	5
v.	Spouse would not have been happy with teaching profession.	1	2	3	4	5
w.	Disliked image of the teacher in the community	1	2	3	4	5
x.	Teaching would not meet wanted social status	1	2	3	4	5
y.	Disliked being in constant public view	1	2	3	4	5
z.	Other (please specify) _____	1	2	3	4	5

GO TO QUESTION #13.

12c. IF YOU ARE PRESENTLY TEACHING VOCATIONAL AGRICULTURE, indicate how each of the following factors affected your decision to enter the teaching profession and remain in it. Circle the most appropriate level of influence for each factor.

EXAMPLE: a. Like working with adult program 1 2 (3) 4 5
(In this example, the factor, like working with adult program, had some influence upon the decision to enter the teaching profession.)

		Level of Influence				
		None	Little	Some	Much	Very Much
a.	Goal was to teach vocational agriculture	1	2	3	4	5
b.	Able to share students successes	1	2	3	4	5
c.	Adequate salary.	1	2	3	4	5
d.	Spouse is happy with teaching profession	1	2	3	4	5
e.	Adequate administrative support, backing on decisions	1	2	3	4	5
f.	Feel adequate to teach students	1	2	3	4	5
g.	Able to get students to learn material	1	2	3	4	5
h.	Adequate preparation on how to teach.	1	2	3	4	5
i.	Feel teaching effectiveness increased after beginning teaching	1	2	3	4	5
j.	Able to teach areas that are comfortable	1	2	3	4	5
k.	Students interested in vo-ag	1	2	3	4	5
l.	Sufficient facilities and teaching materials	1	2	3	4	5
m.	Receive adequate assistance from teacher education	1	2	3	4	5
n.	Sufficient technical preparation for the profession.	1	2	3	4	5
o.	Adequate preparation for organizing and conducting a vocational agriculture program.	1	2	3	4	5
p.	Enjoy working with high school students.	1	2	3	4	5
q.	Like area of state.	1	2	3	4	5
r.	Favorable community attitudes towards vocational agriculture	1	2	3	4	5
s.	Enjoy working with other community agriculture leaders.	1	2	3	4	5
t.	Able to direct and influence students	1	2	3	4	5
u.	Teaching profession achieves social status desired	1	2	3	4	5
v.	Security in teaching profession	1	2	3	4	5
w.	Enjoy work in the FFA.	1	2	3	4	5
x.	Able to work closely with student's parents	1	2	3	4	5
y.	I own my own home in this town.	1	2	3	4	5
z.	Other (please specify) _____	1	2	3	4	5

GO TO QUESTION #13.

13. List the five factors from the previous list by letter that had the greatest influence upon your decision to leave, to never teach, or remain teaching. Letter (a) greatest influence and (e) least influence of the top 5.

a. _____
b. _____
c. _____
d. _____
e. _____

14. What was the one main reason for your enrollment at I.S.U. rather than one of the other colleges or universities in Iowa or the U.S.?

a. _____ Proximity to I.S.U.
b. _____ Lower registration fees
c. _____ Offered Agricultural Education
d. _____ A scholarship award
e. _____ I.S.U. academic prominence
f. _____ Father/guardian a graduate
g. _____ Mother/guardian a graduate
h. _____ Relatives other than parents were graduates
i. _____ Only agricultural school in Iowa
j. _____ Other family member a graduate
k. _____ A friend was a graduate
l. _____ A friend was enrolled or enrolling
m. _____ Career or Field Day activities
n. _____ Veishea visit
o. _____ Other (please specify)
_____

15. What one person made the largest contribution toward influencing your enrollment in Agricultural Education at I.S.U.?

a. _____ Father or guardian
b. _____ Mother or guardian
c. _____ Vo-Ag Instructor
d. _____ H.S. Supt. or Principal
e. _____ County Extension Director
f. _____ College Counselor
g. _____ Relative other than parents
h. _____ Contact with a college representative
i. _____ Contact with Ag. Ed. staff member
j. _____ Friend was a graduate
k. _____ Friend was presently enrolled
l. _____ Own idea
m. _____ Other (please specify)
_____

16. What was the one major source of financial support that made your college degree possible? (Check one)

a. _____ G.I. Bill
b. _____ Parents or guardian
c. _____ Spouse
d. _____ Your part-time job
e. _____ Summer employment
f. _____ Earnings from Vo-Ag or 4-H
g. _____ Your personal finances (other than part-time or summer employment)
h. _____ Other family members
i. _____ Scholarship award
j. _____ Loan other than those mentioned
k. _____ Other (please specify)
_____

17. How many years were you married while attending I.S.U. to receive your B.S. degree? (Circle one)

0 1 2 3 4 5 or more

18. How many years were you a member of the Ag. Ed. Club while attending I.S.U.? (Circle one)

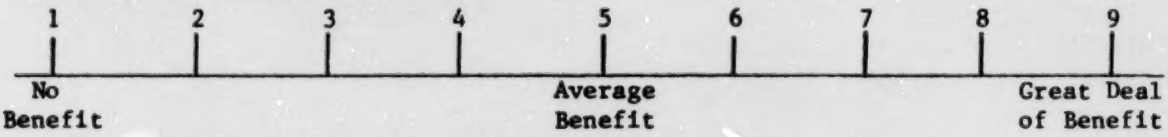
0 1 2 3 4 5 or more

19. How would you classify yourself as to the number of extracurricular activities you took part in while attending I.S.U.?

a. _____ more than average
b. _____ average
c. _____ less than average

20. Number of persons depending on you for financial support (include yourself) at time of B.S. graduation from college? _____ as of December 1, 1982? _____

21. Relating back to your student teaching experience, please read each of the following statements carefully and indicate how beneficial you feel your student teaching experience was in preparing you for your present occupation. Use the following scale in responding to each item:



Amount of benefit student teaching was in preparing you:

_____ 1. to be a community leader.
_____ 2. for work with adults.
_____ 3. for work with young adults.
_____ 4. to speak in front of a group.
_____ 5. to follow authority.
_____ 6. to organize your thoughts and ideas.
_____ 7. to become more competent in technical agriculture.
_____ 8. to better utilize time.
_____ 9. to set goals and strive towards them.
_____ 10. to accept and carry out responsibility.

22. In terms of your felt needs, how valuable was the help you received from your academic advisor? (Check one)

a. _____ Great value
b. _____ Quite helpful
c. _____ Some assistance
d. _____ Little assistance
e. _____ Not helpful at all

23. How would you rate the effectiveness of your total undergraduate program as preparation for your first position after receiving your degree?

a. _____ Poor
b. _____ Fair
c. _____ Average
d. _____ Good
e. _____ Excellent

24. How would you rate the effectiveness of your total undergraduate program as preparation for your present occupation?

a. _____ Poor
b. _____ Fair
c. _____ Average
d. _____ Good
e. _____ Excellent

25. In view of your college and post-college experiences and present occupation, what changes would you recommend in the amount of work required in the Agricultural Education program in the following subject fields? Check the amount you feel should be required.

How do you rate the adequacy of training received in these skill areas at I.S.U. Alternative responses are (1) poor, (2) fair, (3) average, (4) good, or (5) excellent.

	Amt. of Work Req.			Adequacy of Training				
	Decreased 1	Maintain 2	Increased 3	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
1. Communication Skills (English, Speech, etc.)								
2. Natural Sciences (Chemistry, Botany, etc.)								
3. Social Sciences (Economics, Government, etc.)								
4. Agriculture Courses:								
a. Agricultural Economics								
b. Agricultural Mechanics								
c. Agronomy								
d. Animal Science								
e. Horticulture								
5. Agricultural Education:								
a. Supervised Occupational Experience								
b. Future Farmers of America								
c. Adult Work								
d. Methods								
e. Program Development								

26. In how many professional organizations (requiring dues payment) relating to your occupational area are you presently a member? (Do not include honorary or social organizations.)

_____ organizations

27. How did you make contact with your first employer? (Check one)

a. _____ College of Agriculture Placement Service
b. _____ Teacher Placement Service
c. _____ College Counselor
d. _____ Answered an ad or listing
e. _____ Made inquiry requesting employment
f. _____ Employer contacted you
g. _____ Friend or others informed you of the opportunity
h. _____ State employment agency
i. _____ Private employment agency
j. _____ Other (specify) _____
k. _____ Presently in military
l. _____ Presently in graduate school
m. _____ First employment I was self-employed

28. What advanced degree or degrees have you received or have in progress as of December 1, 1982? Check highest level of advancement or degree completion.

a. _____ Have not participated in a collegiate graduate program
b. _____ Partial requirement for M.S. or M.A. degree
_____ quarter hours
_____ semester hours
c. _____ M.S. or equivalent received
d. _____ Partial requirement for Ph.D. or equivalent
e. _____ Ph.D. or equivalent received

Specify the area of study and university.

_____

29. Remarks:

_____

_____

_____

30. Check if you desire a summary of the study.

_____ Yes

_____ No